

Basic Nutrition for Cross Country Runners

Nutrition for athletes is an incredibly broad topic. Unfortunately, like most other topics today, you can find a wealth of information online which is often incorrect. When someone has a vested interest in selling you a product you should immediately be wary. Such is the case with our ex-QB here in New England. Tom Brady has no doubt made a lot of money selling TB-12 method products and nutritional advice, yet virtually all of it is without any scientific evidence to back it up, and his personal guru has also been sued multiple times for false claims about these products.

At best many claims are exaggerated or out of context. At worst, taking massive doses of vitamins/minerals and some supplements can be harmful. Even water, as benign as it seems, can kill you when taken in excess. Yes that's right, drinking too much water can lead to a dangerous condition called hyponatremia, where in extreme circumstances respiratory failure can occur.

So you should start by being an educated consumer, which means finding published, scientific information. There are many different sites where you might search, but I'll simply give you this one a good overall source:

<https://pubmed.ncbi.nlm.nih.gov/>

Now if you want to be a science-denier and just do a google search or check Wikipedia, feel free. For fun I just typed in, "What supplements will make me faster," in a google search window and up popped this:

Feed for Speed: 5 Foods and Supplements That Make You Faster

- Beets/Beet Juice. Beets are frequently touted for their ability to improve running performance. ...
- Bananas. A wise man once said bananas are Mother Nature's energy bar. ...
- Salt. Salt can get a bad rap. ...
- Caffeine. When it comes to speed-enhancing supplements, caffeine might be king. ...
- Vitamin D. ...

That link goes to a company called Stack that -- of course -- would like you to buy its products. While there are potentially many positive benefits to beet juice, bananas, Vitamin D and caffeine, I can assure you that NONE of these will make you FASTER.

So my best advice is to adhere to basic solid nutritional information, starting with some general information about the biggest parts of your daily nutrition: Carbohydrates, Protein, Fat and Water.

No endurance athlete should ever be on a low carbohydrate diet. The body metabolizes these substrates differentially based on the length of time you are exercising and the intensity of that exercise. Under resting conditions, or near rest, the body burns predominantly fat as a fuel source. Body fat is stored energy in fact. However, as the exercise gets more intense, the body shifts to

carbohydrates as the primary fuel source. Virtually everyone on the team has been in a cross country race before, but even if you haven't raced yet it should be clear from the 1K and mile repeat workouts that you will be participating at a high level of intensity. Therefore, you **MUST** have the largest chunk of your diet from carbs in order to train well and race well.

Not all carbs are the same however especially on race day. For general health benefits, a majority of your carbohydrate intake should be from **complex** carb sources, like whole grains (including whole grain pasta), starchy vegetables like sweet potatoes and most leafy green veggies. Most complex carb sources are naturally high in vitamins, minerals, fiber and anti-oxidants. Most fruits, and certainly fruit juice (even if it is 100% fruit) are more likely to be **simple** carbohydrates. Eating fresh fruit daily is definitely healthy for you, although 100% fruit juice isn't necessarily a great idea.

If a significant chunk of your diet is whole grains, fruits and veggies than you already have most of the battle won as an endurance athlete.

The trick is knowing when it's a good idea to eat the simple carbs. Simple carbs digest much more rapidly, raise your blood glucose levels higher and more quickly than do complex carbs. That's why nutritionists recommend we all limit simple carbs (table sugars, honey, processed carbs, and fruit juices) to no more than 10% of our daily calories. Diets high in simple carbs tend to raise your risk for developing diabetes and heart disease later in life. Unfortunately, poor diets high in simple carbs now are one of the driving forces in Type II diabetes occurring at younger and younger ages. Fifty years ago, Type II diabetes was an "adult-onset" disease. Now it is not rare for pre-teens to develop Type II diabetes.

So I encourage all of you to eat a whole grain, complex carb diet as a starting point, but **NOT** on race day. The body stores carbohydrate as glycogen in skeletal muscles and the liver. The more trained the muscle is for endurance activity, the more glycogen can be stored. As long as you are not malnourished, there is more than enough glycogen stored for an event that will last between 16-25 minutes for everyone. In fact with consistent training like many of you have done over the summer, you will have enough glycogen stored to last at least 30-45 minutes.

Therefore, on race day you are **NOT** going to run out of fuel, unless you've been eating poorly for several days leading up to the race. So if you can find a way to eat well, especially for the 48-72 hours leading up to the race, you are better off eating more simple carbs leading up to the race. Otherwise, the slowly digesting food is in your body competing for the energy needed to digest the food. Gatorade and Powerade are generally unnecessary products (unless it's an incredibly hot and humid environment) but they do have the advantage of digesting very rapidly. As do 100% fruit juices and soda.

Yes soda typically isn't considered a nutritional supplement and I would never suggest anyone try racing after drinking a soda unless you've tried it in practice a few times. Believe it or not, cyclists in the Tour de France can often be spotted drinking Coke in the middle of the race because it does have simple sugar and it does digest rapidly, plus the caffeine has endurance benefits over long bouts of exercise. There are many alternatives that you might find helpful. I'm not suggesting you buy any specific product and some of these brands have caffeine, some don't. However, I've used the Cliff Shot Blocks pictured below on four and five hour bike rides many times. They do digest quickly and

would be a reasonable choice to top off the live glycogen stores in the hours leading up to a race. Again, never try ANY approach on a race day until you've tested it out in a training session and you MUST read labels carefully to be smart about anything you're ingesting.



One way to balance being nourished well and not being full of food on race day is to avoid the slowest of all foods to digest; red meat, which brings us to a brief discussion of protein.

Protein is last on the list of substrates that the body uses for energy. The primary role of protein is tissue synthesis, like red blood cell formation, cell membrane formation, and of course muscle repair and growth. Of course it is important for athletes to get adequate protein in the daily diet, but it varies greatly based on what type of athlete you are and what type of protein we're talking about.

An average person who is inactive, probably needs no more than 1/3 gm protein daily per pound of body weight. A typical cross country runner probably does quite well on 1/2 gm per pound, although it's probably not hurting anything to take in 3/4 gm per pound, other than those calories might be taking the place of other better caloric needs. So forget listening to bodybuilder/powerlifter/GNC propaganda. You do NOT need 1 gm or more of protein per pound. Such information is designed to sell you protein supplements.

Might you need protein supplementation? Possibly depending on your overall diet. If you are vegetarian, vegan, or simply lean towards a plant-based diet, then it might be hard to get adequate protein in your diet without supplementation. Most animal sources of protein are likely to be "complete" sources of protein (containing all essential amino acids the body can't manufacture), but most everyone agrees the average American diet should contain less meat. Plant sources of protein are often incomplete, so it makes it much harder for a Vegan to meet daily protein needs without supplementing the diet. So you need to pay attention to what you're eating and assess whether you're getting enough protein.

Good sources of protein that do not come from red meat or pork, include salmon and most other fish, nuts, and dairy. Surprisingly, many of these sources are also somewhat high in fat content, but this is typically unsaturated fat which has many health benefits, compared to red meat which is high in protein and also high in saturated fat which should be minimized in the diet. So if you don't want to supplement protein but you're not a red meat & pork person, then head for fish and nuts.

There are plenty of exceptions to these guidelines depending on any underlying medical condition or your own genetics, but on average shoot for this breakdown of your daily caloric intake:

Carbs (mostly complex): 50-65% -- shifting to simple carbs last 8-12 hours before race

Protein: 10-20% -- avoiding red meat, pork and other non-lean meats the last 24-48 hours before race.

Fats (mostly unsaturated): 15-30%

When it comes to water intake this can clearly vary greatly depending on the environmental conditions. Surprisingly the method that school nurses everywhere often use when talking to students with a suspected stomach bug seems to work fairly well. I ask athletes two questions:

- 1) Are you urinating frequently?
- 2) Is your urine pale in color?

Chances are pretty good if you're urinating a lot and it's pale that your body is more than happy with the level of hydration. Again when it comes to race day, if you have been well hydrated in the 48-72 hours leading up to the race, you don't need to guzzle 8 hours of water before the start. You have more than enough water content in the body for a 20 minute race and who wants extra water sloshing around AND adding body weight to the uphill!

Feel free to ask me any questions you have and certainly anyone with diabetes of other underlying condition should talk to the primary physician in charge of your care.

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